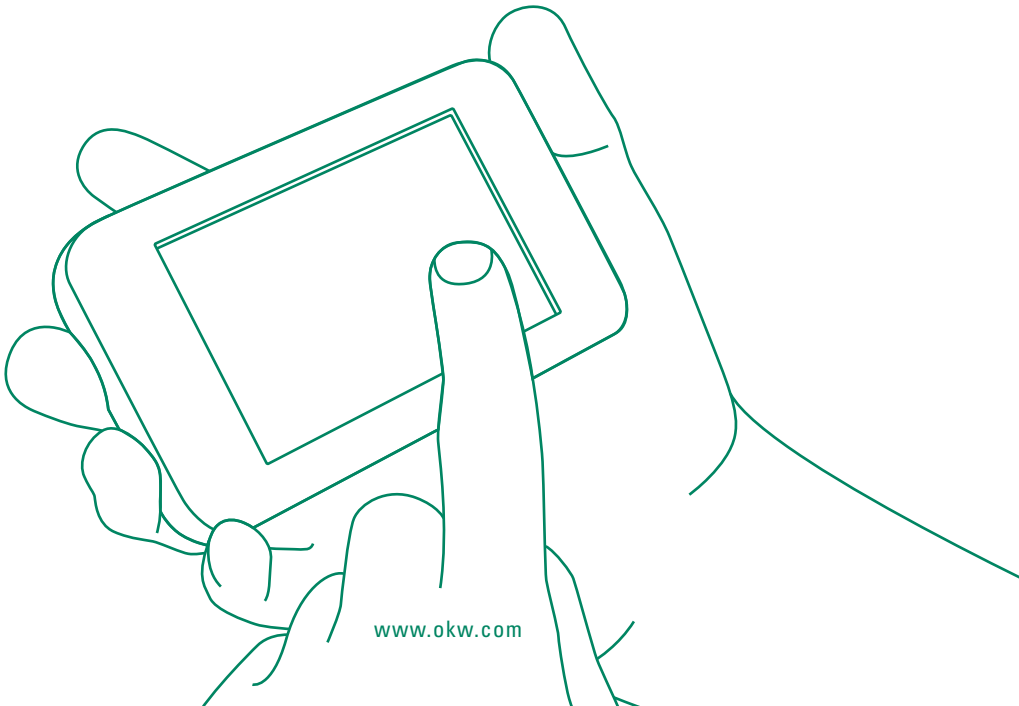
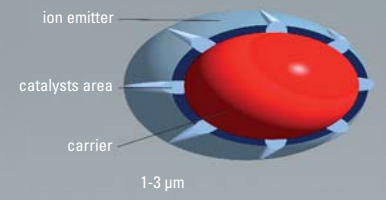


STERILE PLASTIC SURFACES



ANTIMICROBIAL





PROTECTION AGAINST BACTERIA, VIRUSES AND FUNGI

WHAT DO WE MEAN IF TALKING ABOUT ANTI-MICROBE?

ANTIMICROBIAL HOUSING

On request, OKW Gehäusesysteme GmbH can also offer its standard cases in antimicrobial plastic. The compound used for it consists of a high quality, off-white ASA-material in adequate admixtures.

This ASA material contains so-called sterions, in which the active substance is permanently anchored in an inert carrier material and allows the controlled release of highactivity ions. These ions attack the metabolic systems of the microbes that they can no longer breed, and then die out.

PERMANENTLY EFFECTIVE

The material-specific properties remain practically unchanged – a slight colour deviation is possible, however.

This means that the product surface of the new material mixture has a permanent antimicrobial effect – even after mechanical machining.

Reduction of germs

The standard JIS Z 2801 / ISO 22196 serves as a test for antimicrobial activity and effectiveness. The identified germs and in particular their quantity will be reduced by $>2 \log_{10}$ levels within a defined time frame.

Good results can be achieved by using an admixture of 10 % antimicrobial agent, i.e. there is a reduction of germs $>99.9\%$ realized after 5 – 6 hours.

Applications

Besides use in the medical sector, the antimicrobial materials and products are also ideal for equipment and cases that are touched and used by different persons.

This serves as a natural prophylaxis, as protection against bacteria, viruses and fungi, and is good for our most important asset, our health.

VARIETY PROTECTION

Whilst anti-bacterial media exclusively work against bacteria, the anti-microbe materials work against a range of different microorganisms:

Bacteria (e.g. pneumo-cocobacilli and multi-resistant micro-organisms such as MRSA.)

Viruses (e.g. HIV, influenza etc.)

Fungi (e.g. Aspergillus Niger)

Algae

PROBLEM BIOFILM

In suitable environmental conditions bacteria settle. They form strongly growing cultures, which may take over whole surfaces – the biofilm.

These cultures keep in certain environmental humidity and continue to increase there. If these bacteria meet the human organism they may have a toxic effect. This process is similar with fungus spores. Surfaces covered with sterions destroy the infestation. Bacteria, fungi and microorganisms cannot increase.



WHAT ARE STERIONS?

THE TECHNOLOGY

Additive with anti-microbe effect

Metalorganic materials with ionising effect

No nano-materials but nanoscale complexes

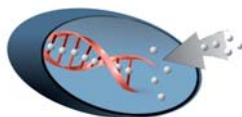
A molecular complex with carrier materials, ion emitters and catalysts

Sterions are no nano-particles

FORMATION OF IONS

Sterions continually form ions with high activity. These ions are suitable to attack the cellular metabolic systems that primitive organisms mortify.

Depending on the doses of the additive the effect is more intensive or weaker. The effect is sustained for many years.



Benefits of sterions

- Short application times
- Extensive extermination of many pests
- High destruction rates
- Sustainability of the effect
- Avoidance of resistances

Bacterial growth

In the above graphs the effect of sterions is clearly visible:

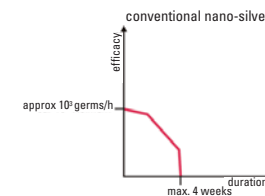
1. Varnish without sterions with E.coli bacteria.
2. Varnish with sterions with E.coli bacteria.

The bacteria growth is significantly reduced in the petri dish.

COMPARISON: STERIONS AND NANO-SILVER

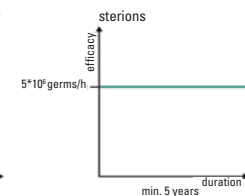
DYNAMICS OF EFFICACY

Sterions principally form a significantly higher number of ions per metal unit than nano-metals. This results in a higher initial effect.



STABILITY OF EFFICACY

Due to their size and structure sterions are anchored in the carrier material. Unlike nano-metals they cannot escape from the carrier material! The effect is also sustained only if the active ingredient remains in the material.





CASES AND TUNING KNOBS

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